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| EXAMINER | |
|---|---|
| HUYNH, KIM T | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2112 | 10 |

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Please find below and/or attached an Office communication concerning this application or proceeding.

RR9

| Office Action Summary | Application No. 09/728,669 | Applicant(s) THORNTON, BARRY | |
|---|---|---|---|
| | Examiner Kim T. Huynh | Art Unit 2112 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *08 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Receipt Acknowledgement*

1. Receipt is acknowledged of the request filed on 4/8/04 for a request for continued examination (RCE) under 37 CFR 1.114 based on the application No. 09728669 which the request is acceptable and an RCE has been established. No claim has been cancelled; claims 40-41 are newly added and claims 1-39 are currently pending.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6, 9-15, 18-27 37,39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lach (US Patent 6,363,452) in view of Ledzius et al. (US Patent 6,539,438)

As per claims 1, 11, 21, 31, 37, Lach discloses a system comprising a plurality of computing systems, the system comprising:

- a cage having a plurality of slots (fig.3, 206,208), wherein each of the slots is configured to receive a computer card; (col.5, lines 14-22)
- a plurality of computer cards, wherein each computer card comprises one of the plurality of computing systems;(col.5, lines 14-22)

- a removable function module, wherein the removable function module is operable to electrically couple to at least a subset of the plurality of computer cards, wherein the removable function module is operable to provide additional functionality of each of the computer cards comprised in the slots of the cage. (col.5, lines 14-52)

Lach discloses all the limitations except each computer card comprises one of the plurality of computing systems, wherein each computing system includes a processor and a memory for executing at least one application program. Although Lach discloses adapter cards but not explicitly discloses the details of the cards. However, Ledzius discloses plurality of PCMCIA cards (col.2, lines 44-63) is inserted into an operating host computer, the FPGA is programmed with programming data stored in non-volatile memory on the PCMCIA card. (col.3, lines 8-20). The method further provides for the storage of reconfigurable computer card's resource information on or off the card such that the reconfigurable computing method may determine if a particular card meets the requirements of an application requesting services. (col.5, lines 4-19)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Ledzius's teaching into Lach's method so as technical advantage is easy adaptability of its technology to any bus type, such as a portable computing bus standard like PCMCIA. (col.6, lines 20-31)

As per claims 2, 23, Lach discloses wherein each of the plurality of computer cards is configured for coupling to one or more cables for communication of encoded human interface signals with a remote location. (col.4, lines 26-42)

As per claim 3, Lach discloses wherein each of the plurality of computer cards is further configured for communication of network signals with a network. (col.4, lines 42-48)

As per claims 26, 33, Lach discloses method further comprising electrically coupling each of the computer cards to one or more cables, wherein the one or more cables are adapted to couple each of the computer cards to a network. (col.5, lines 14-52)

As per claims 4, 12, 27, 32, Lach discloses:

- wherein the cage further includes a cage connector positioned proximate to each of the slots of the cage, wherein the cage connector includes a plurality of computer card connectors which are each configured to couple to one of the computer cards when the computer cards are inserted into slots of the cage, wherein the cage connector further includes a plurality of second connectors electrically coupled to the plurality of computer card connectors; (col.5, lines 14-22)
- wherein the removable function module is operable to be coupled to the plurality of second connectors. (col.5, lines 14-52)

As per claims 5, 14, 20, 24, Lach discloses wherein the plurality of second connectors are each configured for coupling to one or more cables for

communication of encoded human interface signals with a remote location, and for communication of network signals with a network; (col.4, lines 26-48)

As per claims 6, 15, Lach discloses:

- wherein the removable function module is a first removable function module that provides first functionality; (col.5, lines 14-52)
- wherein the first removable function module is operable to removed and replaced with a second different removable function module, wherein the second removable function module provides second different functionality of each of the computer cards comprised in the slots of the cage. (col.5, lines 14-52)

As per claims 9, 18, 35, Lach discloses wherein the plurality of computing systems comprise a plurality of independent computing systems.(col.5, lines 14-32)

As per claims 10, 19, 30, 36, 39, Lach discloses wherein each computer card comprises:

- a frame; (col.5, lines 33-39) wherein frame is inherently enclosed all pc must has frame, cabinet to hold cards)
- a printed circuit board mounted to the frame; (col.5, lines 14-39)
- a CPU (fig.3, 105) comprised on the printed circuit board; (col.5, lines 14-39)
- a memory comprised on the printed circuit board;(col.5, lines 23-25)
- a non-volatile memory comprised on the frame; (col.7, lines 20-29)

- network interface logic comprised on the printed circuit board for interfacing to a network; (col.4, lines 26-64)
- a human interface logic comprised on the printed circuit board which is operable to receive two or more human interface signals and encode the two or more human interface signals into a format suitable for transmission to a remote location; (col.4, lines 26-64)
- wherein the human interface logic is further operable to receive two or more encode human interface signals from the remote location and decode the two or more encoded human interface signals from a format suitable for transmission from the remote location; (col.4, lines 26-64)
- a human interface connector coupled to the human interface logic, wherein the human interface connector is adapted to couple to the one or more cables for communication of the encoded human interface signals with a remote location; and(col.4, lines 26-64)
- a power supply comprised on the frame, wherein the power supply is operable to couple to an external power source and supply power to the plurality of computing systems.(col.7, lines 53-64)

As per claim 13, Lach discloses wherein each of the plurality of computer cards is adapted for coupling to the one or more cables through the plurality of second connectors. (col.5, lines 22-32)

As per claim 22, Lach discloses the method further comprising:

- removing the first removable function module; and (col.5, lines 14-32)

- attaching a second removable function module to electrically connect with at least a subset of the plurality of computer cards, wherein the second removable function module provides a second additional functionality to each of the at least a subset of the plurality of computer cards comprised in the slots of the cage. (col.5, lines 14-67)

As per claim 40, Lach discloses wherein the computer card contains a personal computer. (col.5, lines 23-25)

As per claim 41, Lach discloses a system comprising a plurality of computing systems, the system comprising:

- A cage having a plurality of slots (fig.3, 206,208), wherein each of the slots is configured to receive a computer card; (col.5, lines 14-22)
- wherein each personal computer comprised on each of the plurality of computer cards interfaces with a separate set of human interface devices, including at least a monitor and a keyboard, to provide personal computer functionality to a user of the separate set of human interface devices;(col.4, lines 26-48)
- A removable function module, wherein the removable function module is operable to electrically couple to at least a subset of the plurality of computer cards, wherein the removable function module is operable to provide additional functionality to each of the computer cards comprised in the slots of the cage. (col.5, lines 14-52)

Lach discloses all the limitations except each computer card comprises one of the plurality of computing systems, wherein each computing system includes a processor and a memory for executing at least one application program. Although Lach discloses adapter cards but not explicitly discloses the details of the cards. However, Ledzius discloses plurality of PCMCIA cards (col.2, lines 44-63) is inserted into an operating host computer, the FPGA is programmed with programming data stored in non-volatile memory on the PCMCIA card. (col.3, lines 8-20). The method further provides for the storage of reconfigurable computer card's resource information on or off the card such that the reconfigurable computing method may determine if a particular card meets the requirements of an application requesting services. (col.5, lines 4-19)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Ledzius's teaching into Lach's method so as technical advantage is easy adaptability of its technology to any bus type, such as a portable computing bus standard like PCMCIA. (col.6, lines 20-31)

4. Claims 7, 16, 28, 29, 34, 38, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lach (US Patent 6,363,452) in view of Ledzius et al. (US Patent 6,539,438) further in view of Heath et al. (US Patent 6,564,274)

Lach discloses wherein the removable function module comprises one or more of:

- at least one cable connection module, wherein the at least one cable connection module is operable to provide cable connections to one or more cables for the plurality of computer cards; (col.5, lines 22-32)
- at least one network card (fig.3, 190), wherein the at least one network card is operable to provide a network interface to the plurality of computer cards; and (col.4, lines 43-48)
- at least one network switch, wherein the at least one network switch is operable to perform network switching functions for the plurality of computer cards; (col.5, lines 22-32)
- at least one data switch, wherein the at least one data switch is operable to perform data switching functions for the plurality of computer cards; (col.5, lines 23-32)
- at least one network router, wherein the at least one network router is operable to perform network routing functions for the plurality of computer cards; (col.4, lines 43-48)
- at least one network processing unit, wherein the at least one network processing unit is operable to perform network processing functions for the plurality of computer cards; (col.4, lines 43-48)
- at least one gateway, wherein the at least one gateway is operable to perform gateway functions for the plurality of computer cards; (col.5, lines 22-34)

- at least one firewall, wherein the at least one firewall is operable to restrict network access to the plurality of computer cards; (col.4, lines 39-48)
- a human interface switching unit, wherein the human interface switching unit is configurable to route encoded human interface signals from one or more of the plurality of computer cards to one or more of a plurality of remote human interface devices coupled to the removable function module; (col.4, lines 26-48)
- at least one MPEG video unit, wherein the at least one MPEG video unit is operable to provide MPEG video services to the plurality of computer cards. (col.4, lines 26-42)

Lach discloses all the limitations as above except a Gigabit Ethernet network interface, PBx, telecommunication interface. However, Heath discloses Ethernet network interface, telecommunication systems, cable systems. (col.11, lines 46-62)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Heath's teaching into Lach's method to have network interface or telecommunication interface so as to be compatible to adaptation components to various types of data communication network within a system.

5. Claims 8,17 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lach (US Patent 6,363,452)

As per claim 8 and 17, Lach discloses all the limitations as above except the external RJ45 connectors.

Examiner takes Official Notice that RJ45 connector is well know in the art for providing connection between devices.

It would have been obvious to one having ordinary skills in the art at the time the invention was made to have a RJ45 connectors for connecting the devices and so as for communications.

As per claim 25, Lach does disclose human interface devices but Lach does not explicitly disclose human interface devices are located more than 20 feet from the cage.

It would have been an obvious matter of design choice to have a human interface devices located more than 20 feet from the cage so as to be more flexible; with or without 20 feet away system would perform equally as well.

***Response to Amendment***

6. Applicant's amendment filed on 4/8/04 have been fully considered but are place an application in condition for allowance.

a. In response to applicant's argument that Lach nor Ledzius disclose "wherein the removable function module is operable to provide additional functionality to each of the computer cards comprised in the slots of the cage". As Lach notes at (col.5, lines 14-51), discloses adapter cards typically contain functionality in addition to computer system; the adapter cards can contain any sort of computer functionality as memory or a peripheral device. Furthermore, as Lach notes at (col.1, lines 42-56), Examiner

further cited for clarification , Hot-plug allows adapter cards to be inserted into or removed from slots at any time, even while the system is powered on so that to provide high system availability and serviceability. Typically hot plug administrative is provides for coordinating hot-plugging activities and interfacing with the server's system(function module).

b. In response to applicant's argument that Lach does not disclose "wherein the plurality of computing systems comprises a plurality of independent computing systems. As Lach notes at (col.1, lines 57-67), Examiner further cited for clarification, hot-plugging is a process of inserting or removing an adapter card from a computer server or other computer system without stopping software running on the system or powering down the system. Plurality of adapters cards (provides any sort of computer functionality), can be independently insert/remove to/from system without disrupting(independent).

c. In response to applicant's argument that Lach does not disclose a power supply comprised on the frame, wherein the power supply is operable to couple to an external power source and supply power to the plurality of computing systems). As Lach notes at (col.7, lines 53-64), each slot control module is connected to the associated slot by the following signals lines Pwr_on/off which turns power on and off to the slot, switch_control which causes the isolation mechanism to connect and disconnect the slot. Power supply (external source) coupled to computer system is well known, then distributed to slots(receiving/removing computing systems-cards) which coupled to adapter cards.

d. In response to applicant's argument that Ledzius teaches PCMCIA cards, not personal computers comprises on a card, PCMCIA cards do not contain the functionality of a personal computer. Examiner further cited reference PCMCIA CARD DEVELOPMENTS(non-patent literal) for clarification. As Porooshani notes at page 145, discloses PCMCIA best seller lists are standard faxmodem cards, LAN cards and hard drive cards. The lineup reflects that communications (functionality) is one of the fastest growing segments of the PC card market.

It is clear that Lach and Ledzius are analogous arts and therefore it is properly stated in the rejection of record.

## *Conclusion*

*7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (703)305-5384 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 8:30AM- 6:30PM.*

*If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815 or via e-mail addressed to [mark.rinehart@uspto.gov]. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.*

*Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5631.*

*Kim Huynh*

*June 18, 2004*

MARK H. RINEHART
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